

IN THE CLAIMS:

Please amend the claims of this application so as to read as follows:

1-27. (Canceled, without prejudice)

28. (Currently Amended) A data storage medium for use with a display device,
said data storage medium having at least one pre-specified data
unit display data recorded thereon,

~~wherein the display data is recorded in the form of~~
~~pre-specified units, each pre-specified data unit of~~
~~display data including includes data (i) display~~
~~elements for display by the display device to be~~
~~displayed, and (ii) management elements associated~~
~~with said display elements, said management~~
~~elements including all display information and scroll~~
~~display control information necessary for the display~~
~~device to select among the display elements for~~
~~display, including a display of selected ones of said~~
~~display elements in a predetermined sequence as a~~
~~scroll display and/or scroll display of said data to be~~
~~displayed, and~~

wherein ~~the scroll display control~~ said information for selecting among the display elements for scroll display defines a plurality of intervals that together form a scroll path among the display elements along which ~~scrolling said scroll display~~ is to be conducted, the intervals forming said a scroll path being specified by line segments having different directions in a co-ordinate coordinate system defined by said pre-specified unit according to coordinate values assigned to the display elements data to be displayed in said pre-specified unit.

29. (Currently Amended) ~~The A data storage medium with display data recorded thereon~~ as defined in claim 28, characterized in that each pre-specified unit ~~of recorded display data is~~ includes the display elements associated with a document page.

30. Canceled, without prejudice.

31. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ as defined in claim 28, characterized in that the ~~scroll display path~~ the information for selecting among the display elements for scroll display includes information for linking a first scroll display path with another scroll display path.

32. (Currently Amended) A data storage medium for use with a display device,
said data storage medium with display data recorded thereon
~~wherein the display data is recorded in the form of having at least~~
one pre-specified data units recorded thereon, each said pre-
specified data unit of display data including display elements to be
displayed by said display device, and management elements
associated with said display elements for controlling the display
information and , including the scroll display , of said display
elements control information necessary for the display and/or
~~scroll display of said data to be displayed, and wherein the scroll~~
~~display control information~~ said management elements includes
~~information specifying elements for controlling a scroll display~~
speed.

33. (Currently Amended) A data storage medium ~~with display data recorded~~
~~thereon~~ as defined in claim 28, characterized in that the
management elements include management elements scroll
~~display control information includes information specifying display~~
~~information~~ associated with selected areas of said coordinate
system defined by said ~~pre-selected~~ pre-specified unit for scroll
display.

34. (Currently Amended) A data storage medium ~~with display data recorded~~
~~thereon~~ as defined in claim 28, characterized in that the
management elements include management elements scroll
~~display control information includes information for specifying a~~
scale of enlargement or reduction of a display area the display
elements located along a scroll path for scroll display.

35. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ according to Claim 28 wherein ~~the display data is recorded in the form of pre-specified units, the management elements in each pre-specified data unit include of display data including~~ display information and scroll display information, and wherein the scroll display ~~control~~ information includes synchronous reproduction information for specifying non-motionless data display elements to be reproduced in synchronism with ~~the~~ a scroll display of other display elements.
36. (Currently Amended) A display device for ~~reproducing and displaying the display elements stored on a data storage medium with display data thereon~~ as defined in any one of claims 28, 29, 31, 32, 33, 34 or 35, comprising a display controller for performing a scroll display of selected ones of said display elements based on the said information for selecting among the display elements for scroll display information.
37. (Currently Amended) A display device as defined in claim 36, further comprising a scroll indicating means for scroll display , and wherein said scroll display is conducted based on ~~the said~~ information included in said management elements for selecting among the display elements for scroll display information only while a user instructs said display controller to perform scroll display in either forward or backward directions along ~~said~~ a scroll path.

38. (Currently Amended) A data storage medium for use with a display device,
said data storage medium having with display data associated
with an entire document or the like recorded thereon, said display
data including image data objects for display on a display screen
of said display device, and all management information associated
with each of said image data objects required by said display
device for the display, including the scroll display, thereof, and all
~~information for scroll display associated with each of said image~~
~~data objects necessary for the display and/or scroll display of said~~
~~image data objects,~~ comprising:

a computer readable medium in on which said
display data is recorded in the form of distinct files, each
said distinct file containing a pre-selected portion of said
display data including image data objects along with all of
~~their~~ the respective associated management information
required by said display device for the display, including
the scroll display, thereof and information for scroll display
~~necessary for the display or scroll display,~~ wherein said
management information for the scroll display of said image
data objects includes scroll path information defining a
plurality of intervals that together form a scroll path, said
intervals being specified by line segments having different
directions in a ~~co-ordinate~~ coordinate system defined by
said distinct file according to coordinate values assigned to
said image data objects in said distinct file.

39. (Currently Amended) The data storage medium ~~with display data recorded thereon~~ as defined in claim 38, characterized in that the pre-selected portion of said display data is a document page grouping of said image data objects and all of the management information associated therewith required by said display device for the display, including the scroll display, thereof.

40. Canceled, without prejudice.

41. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ as defined in claim 38, characterized in that the ~~scroll path~~ management information associated with the image data objects contained in each one of said distinct files includes information for linking the a scroll display of the image data objects contained in ~~each one of said files that file~~ with the ~~scroll path of the image data objects located on a scroll path~~ contained in at least another one of said distinct files.

42. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ as defined in claim 38, characterized in that the management information associated with the image data objects in each said distinct file required for the ~~for~~ scroll display of said image data objects includes a scroll display speed information.

43. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ as defined in claim 38, characterized in that the management information required by said display device for the scroll display of said image data objects includes information for specifying a scroll display area on ~~the~~ a display screen of a said display device within which said scroll display of said image data objects is to occur.
44. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ as defined in claim 38, characterized in that the management information required by said display device for the scroll display of said image data objects includes information for specifying a scale of enlargement or reduction of a display area for scroll display on ~~the~~ a display screen of said a display device within which said scroll display is to occur.
45. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ as defined in claim 38, characterized in that ~~the said~~ management information required for scroll display by said display device associated with each said image data object includes synchronous reproduction information for specifying other image data objects to be ~~reproduced~~ displayed in synchronism with the scroll display of each said image data object.

46. (Currently Amended) A display device for ~~reproducing and~~ displaying image data objects contained in at least one distinct file ~~the files~~ recorded on the a data storage medium with display data recorded thereon as defined any one of claims 38, 39, 41, 42, 43, 44 ; or 45, comprising a display controller performing scroll display of said image data objects located on a scroll path based on the management information associated with those image data objects required by said display device for the scroll display thereof.

47. (Currently Amended) A display device as defined in claim 46, further comprising a scroll indicating means for monitoring the scroll display of said image data objects on a display screen of said display device, ~~and~~ wherein said scroll display is conducted based on the scroll display management information required for display, including scroll display, only while a user instructs said display controller to perform said scroll display in either forward or backward directions along a selected said scroll path.

48. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ according to claim 28, wherein the ~~scroll display control information~~ necessary for display, including scroll display, specifies the scroll path of the display data elements of the display information as vectors identified by ~~co-ordinate~~ coordinate values of said ~~pre-specified units~~ data elements in a coordinate system defined by said display data according to coordinate values assigned to the display elements ~~display information~~ in each of said pre-specified data units.

49. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ according to claim 48, wherein a sequential display of said display elements ~~pre-specified units of display data~~ is conducted along said vectors.
50. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ according to claim 28, wherein said the scroll display control information necessary for said display device to select among said display elements for the display, including the scroll display, thereof specifies the a scroll path of for the display of the display elements display information as vectors identified by ~~co-ordinate~~ coordinate values of said display elements ~~pre-specified units~~ in a coordinate system defined by said display data according to coordinate values assigned to the display elements display information in each of said pre-specified units; and wherein a sequential display of said display elements ~~pre-specified units of display data~~ is conducted along said vectors.
51. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ according to claim 38, wherein said management the information required by said display device for the display, including the scroll display, of said image data objects for scroll display specifies the scroll path of the display of the image data objects as vectors identified by ~~co-ordinate~~ coordinate values of said image data objects in a coordinate system defined by said distinct files according to coordinate values assigned to said image data objects in each of said distinct files.

52. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ according to claim 51, wherein a sequential display of said image data objects is conducted along said vectors.

53. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ according to claim 38, wherein the management information required by said display device for the display, including the scroll display, of said image data objects information ~~for scroll display~~ specifies the scroll path of the display of the image data objects as vectors identified by coordinate ~~co-ordinate~~ values of said image data objects in a coordinate system defined by in said distinct files according to coordinate values assigned to said image data objects in each of said distinct files, and wherein a sequential display of said image data objects is conducted along said vectors.

54. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ as defined in claim 28, characterized in that the scroll display control information includes a scale of enlargement or reduction of a display area for scroll display on a screen of said display device.

55. (Currently Amended) A data storage medium ~~with display data recorded thereon~~ as defined in claim 38, characterized in that the management information required by said display device for the display, including the scroll display, of said image data objects ~~for scroll display~~ includes a scale of enlargement or reduction of a display area for scroll display on a ~~the~~ screen of said ~~a~~ display device.